



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 2  
LSASD/HWSB/HWSS  
2890 Woodbridge Avenue, Edison, NJ 08837

## EXECUTIVE NARRATIVE

**Case No.:** 49917

**Site:** New Cassel/Hicksville GW Contamination

**Number of Samples:** 8 (GW), 4 (FB), 2 (TB)

**Analysis:** TVOA, TVOA-SIM (MA # 3138.0),  
SVOA, SVOA-SIM (MA 3139.0)  
PEST (MA 3126.0)

**SDG No.:** BGJL9

**Laboratory:** Analytical Resources, LLC

**Sampling dates:** 03/29/2022 - 03/31/2022

**Validation SOP:** QA-HWSS-A-004 (Rev 0),  
QA-HWSS-A-005 (Rev 0), QA-HWSS-A-007 (Rev 0)

### **QAPP:**

**Contractor:** HDR APTIM

**Reference:** DCN: 10256504-0, April 2022

### **SUMMARY OF DEFINITIONS:**

**Critical:** Results have an unacceptable level of uncertainty and should not be used for making decisions. Data have been qualified "R" rejected.

**Major:** A level of uncertainty exists that may not meet the data quality objectives for the project. A bias is likely to be present in the results. Data has been qualified "J" estimated. "J+" and "J-" represent likely direction of the bias.

**Minor:** The level of uncertainty is acceptable. No significant bias in the data was observed.

### **Critical Findings:**

None

### **Major Findings:**

The following samples have analytes that have been qualified "J", "J+" or "J-".

**TVOA/TVOA-SIM:** BGJL9, BGJM0, BGJM1, BGJM3, BGJM4, BGJM5, BGJM6, BGJM7, BGJM9, BGJN5 and BGJN2

**SVOA/SV-SIM:** BGJL9, BGJM0, BGJM1, BGJM2, BGJM3 and BGJM4

### **Minor Findings:**

One or more analytes in one or more samples are qualified "J" due to results between MDL and CRQL.

**COMMENTS:** Per request in ARF, Summary Reports were created without project action levels.

**Reviewer Name(s):** Reginald St-Juste, Steffanie Tobin

**Approver's Signature:** *Narendra Kumar*

**Date:** 5/26/2022

**Name:** Narendra Kumar

**Affiliation:** USEPA/R2/HWSB/HWSS



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<b>Data Qualifier Definitions (National Functional Guidelines)</b>			
<b>Qualifier Symbol</b>	<b>Explanation</b>		
	<b>INORGANICS</b>	<b>ORGANICS</b>	<b>CHLORINATED DIOXIN/FURAN</b>
<b>U</b>	The analyte was analyzed for, but was not detected above the level of the reported quantitation limit.	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method	The analyte was analyzed for but not detected. The value preceding the "U" may represent the adjusted Contract Required Quantitation Limit (see DLM02.X, Exhibit D, Section 1.2 and Table 2), or the sample specific estimated detection limit (EDL, see Method 8290A, Section 11.9.5).
<b>J</b>	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL).	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to an issue with the quality of the data generated because certain QC criteria were not met, or the concentration of the analyte was below the adjusted CRQL).
<b>J+</b>	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.	
<b>J-</b>	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.	
<b>UJ</b>	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.	The analyte was not detected (see definition of "U" flag, above). The reported value should be considered approximate.
<b>R</b>	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
<b>N</b>		The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".	
<b>NJ</b>		The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	
<b>C</b>		This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).	
<b>X</b>		This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.	



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## DATA ASSESSMENT

### ANALYSIS: TVOA /TVOA-SIM (MA 3138.0)

The current SOP QA-HWSS-A-004 (Rev 0) March 2022, USEPA Region II for the evaluation of Trace Volatile organic data, and all related Change Request Forms (CRF) for this SOP, generated through Statement of Work SFAM01.1, and any future editorial revisions of SFAM01.1 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi-Automated Screening Results Report. Tentatively Identified Compounds (TICs) for TVOA organic fraction is not validated.

#### 1. HOLDING TIME AND PRESERVATION:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those detected and non-detected analytes in the samples whose holding time has been exceeded will be qualified as per Table 2 of QA-HWSS-A-004 (Rev 0). Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

#### 2. DEUTERATED MONITORING COMPOUNDS (DMC's):

All samples are spiked with DMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured DMC recovery limits were outside the specified limits in Table 10 of SOW SFAM01.1 (Exhibit D, trace level volatile analysis, Section 17), qualifications were applied as per Table 8 of the SOP QA-HWSS-A-004 (Rev 0) to all the samples and analytes as shown below.

##### TVOA:

The following sample has DMC percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J+. Non-detects are not qualified.

##### Chloroform-d BGJM4

1,1-Dichloroethane, Bromochloromethane, Chloroform, Dibromochloromethane, Bromoform

##### TVOA-SIM:

No problems were found for this criterion.

#### 3. MATRIX SPIKE/ MATRIX SPIKE RECOVERY:

MS/MSD data is generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data.

Not applicable

#### 4. BLANK CONTAMINATION:



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Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the amount of contamination present in the QA blanks, the analytes are qualified as per Table 7 of SOP QA-HWSS-A-004 (Rev 0).

**A) Method blank contamination:**

**TVOA:**

No problems were found for this criterion.

**TVOA-SIM:**

The following samples have analyte results reported less than CRQLs. The associated method blank results are less than CRQLs. Detects are qualified U. Sample results have been reported at CRQLs.

**cis-1,3-Dichloropropene** BGJL9, BGJM0, BGJM1, BGJM2, BGJM3, BGJM4, BGJM5, BGJM6, BGJM8, BGJM9, BGJN2 and BGJN3

**B) Field or rinse blank contamination: BGJM1, BGJM3 and BGJM9**

**TVOA:**

The following samples have analyte results reported less than CRQLs. The associated field blank results are less than CRQLs. Detects are qualified U. Sample results have been reported at CRQLs.

**Toluene** BGJN3, BGJM0 and BGJM4

**TVOA-SIM:**

No additional qualification is required due to field blank contamination because the contamination in the field blank has been qualified in the method blank contamination section.

**C) Trip blank contamination: BGJM7 and BGJN5**

**TVOA:**

No problems were found for this criterion.

**TVOA-SIM:**

No additional qualification is required due to trip blank contamination because the contamination in the trip blank has been qualified in the method blank contamination section.

**D) Storage Blank associated with TVOA samples only:**



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**TVOA:**

The following samples have analyte results reported less than the CRQL. The associated storage blank results are greater than the CRQLs. Detects are qualified U. Sample results have been reported at the CRQLs.

**Acetone** BGJM3, BGJM0, BGJL9, BGJM5 and BGJM6

The following samples have common contaminant analyte results reported less than 2x the blank results. The associated storage blank results are greater than CRQLs. Reported concentration of the analyte in the sample have been qualified U.

**Acetone** BGJN3, BGJN2, BGJM9, BGJM8, BGJM1 and BGJM4

**TVOA-SIM:**

No additional qualification is required due to storage blank contamination because the contamination in the storage blank has been qualified in the method blank contamination section.

**E) Tentatively Identified Compounds:**

Tentatively Identified Compounds (TICs) for TVOA organic fraction are not validated.

**5. MASS SPECTROMETER TUNING:**

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene. If the mass calibration is in error, all associated data will be classified as unusable "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

**6. CALIBRATION:**

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

**A) Response Factor GC/MS:**

The response factor measures the instrument's response to specific chemical compounds. All analytes for initial, ICV and continuing calibration should meet the minimum RRF criteria as listed in Table 4 of SOW SFAM01.1 (Exhibit D, trace level volatile analysis, Section 17). If RRF is less than minimum RRF specified in the Table 4, all detects in the sample will be qualified as estimated "J" and non-detects for that compound will be rejected "R". Qualifications were applied to the samples and analytes as shown below.



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No problems were found for this criterion.

**B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):**

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration.

Percent RSD must be less than maximum %RSD in Table 4 of SOW SFAM01.1 (Exhibit D, trace level volatile analysis, Section 17) for all target analytes. For the opening or closing CCV %D must be within the inclusive opening or closing maximum %D limits as listed in Table 4 of SOW SFAM01.1 (Exhibit D, trace level volatile analysis, Section 17) for all Target compounds. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are qualified as estimated, "J" and Non-detects are qualified "UJ" for %D values outside criteria only. If %RSD exceeds QC criteria, detects are qualified as "J" and non-detects are not qualified. Qualifications were applied to the samples and analytes as shown below.

The following analytes in the sample shown were qualified for %RSD and %D:

**TVOA:**

The following samples are associated with an initial calibration percent relative standard deviation (%RSD) outside criteria. Detects are qualified as estimated J. Non-detects are not qualified.

**Dibromochloromethane** BGJL9, BGJM0, BGJM1, BGJM2, BGJM3, BGJM4, BGJM5, BGJM6, BGJM7, BGJM8, BGJM9, BGJN2, BGJN3 and BGJN5

**1,2-Dibromoethane** BGJL9, BGJM0, BGJM1, BGJM2, BGJM3, BGJM4, BGJM5, BGJM6, BGJM7, BGJM8, BGJM9, BGJN2, BGJN3 and BGJN5

The following samples are associated with a closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Non-detects are qualified as estimated UJ.

**Acetone** BGJM4, BGJM5DL, BGJM6DL, BGJM8DL and BGJN2DL

**TVOA-SIM:**

No problems were found for this criterion.

**7. INTERNAL STANDARDS PERFORMANCE GC/MS:**

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count and retention time must be in the range as specified in Table 10 of SOP QA-HWSS-A-004 (Rev 0) of the associated continuing calibration internal standard area. If the internal standard area count and retention time were outside the specified limits in Table 10 of SOP QA-HWSS-A-004 (Rev 0), qualifications will be applied to the results for compounds quantitated with that IS as per Table 10 of SOP QA-HWSS-A-004 (Rev 0). Qualifications were applied to the samples and analytes as shown below.



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No problems were found for this criterion.

**8. FIELD DUPLICATES:**

No field duplicate sample was identified in this SDG.

**9. COMPOUND IDENTIFICATION:**

Target compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within a window of 0.06 RRT units of the standard compound and have ion spectra which has a ratio of the primary and secondary m/z intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

**10. CONTRACT PROBLEMS NON-COMPLIANCE:**

No problems were found for this criterion.

**11. FIELD DOCUMENTATION:**

No problems were identified.

**12. OTHER PROBLEMS:**

**TVOA:**

None

**TVOA-SIM:**

The following samples were not analyzed at initial run due to high concentration of non-target SIM analytes detected during full scan TVOA analysis.

BGJL9, BGJM0, BGJM6, BGJM4 and BGJM2

**13. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:**

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are used. See summary report and EDD for applicable samples and analytes.

**TVOA:**

The following dilution samples were only used for one or more analytes.  
BGJL9DL, BGJM5DL, BGJM6DL, BGJM8DL and BGJN2DL

The following dilution sample was not used.



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BGJM4DL

**TVOA-SIM:**

The following samples have initial and or re-analysis. Using professional judgement, best results were reported.

BGJM8 and BGJN2

**ANALYSIS: SVOA/SV-SIM (PAH) (MA # 3139.0)**

The current SOP QA-HWSS-A-005 (Rev 0) April 2022, USEPA Region II for the evaluation of Semi-Volatile organic data, and all related Change Request Forms (CRF) for this SOP, generated through Statement of Work SFAM01.1, and any future editorial revisions of SFAM01.1 has been applied. Data has been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi-Automated Screening Results Report. Tentatively Identified Compounds (TICs) for BNA organic fraction is not validated.

**1. HOLDING TIME AND PRESERVATION:**

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded, qualifications will be applied as per SOP HW-35A (Rev 1).

No problems were found for this criterion.

**2. DEUTERATED MONITORING COMPOUNDS (DMCs):**

All samples are spiked with DMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured DMC recovery limits were outside Table 6 of SOP HW-35A (Rev 1), qualifications were applied as per Table 7 of SOP HW-35A (Rev 1) to all the samples and analytes as shown below.

**SVOA:**

The following sample has DMC percent recoveries less than the primary lower limit but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Non-detects are qualified as estimated UJ.

**Benzo(a)pyrene-d12 BGJL9**

Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3 cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene

The following sample has DMC percent recoveries less than the expanded minimum criteria. Detects are qualified as estimated J-. Non-detects are qualified as unusable R.

**Benzo(a)pyrene-d12 BGJL9DL**

Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3 cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene





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The following samples have DMC percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Non-detects are qualified as estimated UJ.

**4-Chloroaniline-d4** BGJM0, BGJM2, BGJM2DL, BGJM4  
4-Chloroaniline

**SV-SIM:**

No problems were found for this criterion.

**3. MATRIX SPIKE/MATRIX SPIKE DUPLICATES (MS/MSD):**

**MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.**

Not applicable

**4. LABORATORY CONTROL SAMPLE (LCS):**

**LCS data is generated to determine the long-term precision and accuracy of the analytical method. The LCS may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.**

No problems were found for this criterion.

**5. BLANK CONTAMINATION:**

**Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the amount of contamination present in the QA blanks, the analytes are qualified as per Table 5 of SOP HW-35A (Rev 1).**

**A) Method blank contamination:**

**SVOA:**

No problems were found for this criterion.

**SV-SIM:**

The following samples have analyte results reported less than CRQLs. The associated method blank results are less than CRQLs. Detects are qualified U. Sample results have been reported at CRQLs.

**Naphthalene** BGJL9, BGJM4 and BGJM4DL



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**Acenaphthene BGJL9**

**B) Field or rinse blank contamination: BGJM1, BGJM3 and BGJM9**

**SVOA:**

No qualification is required due to field blank contamination. The field blank contains laboratory contaminant, 4-Chloro-3-methylphenol. 4-Chloro-3-methylphenol was not detected in the associated samples.

**SV-SIM:**

No additional qualification is required due to field blank contamination because the contamination in the field blank has been qualified in the method blank contamination section.

**C) Tentatively Identified Compounds:**

Tentatively Identified Compounds (TICs) for SVOA organic fraction are not validated.

**6. MASS SPECTROMETER TUNING:**

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for Semi-volatiles is Decafluorotriphenyl-phosphine (DFTPP). If the mass calibration is in error, all associated data will be classified as unusable "R".

No problems were found for this criterion.

**7. CALIBRATION:**

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

**A) Response Factor GC/MS:**

The response factor measures the instrument's response to specific chemical compounds. All analytes for initial calibration, ICV and continuing calibration should meet the minimum RRF criteria as listed in Table 2 of SOP HW-35A (Rev 1). If RRF is less than minimum RRF as specified in Table 2 for all target analytes, use professional judgment and all detects in the sample will be qualified as "J+" or "R". All non-detects for that compound will be rejected "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

**B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):**



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Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance.

Percent RSD must be less than maximum %RSD in Table 2 of SOP HW-35A (Rev 1) for all target analytes. For the ICV/opening or closing CCV %D must be within the inclusive opening or closing maximum %D limits as listed in Table 2 of SOP HW-35A (Rev 1) for all Target compounds. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and Non-detects are flagged "UJ" for %D values outside criteria only. If %RSD exceeds QC criteria, detects may be qualified as "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

The following analytes in the sample shown were qualified for %RSD and %D:

**SVOA:**

The following samples are associated with an initial calibration percent relative standard deviation (%RSD) outside criteria. Detects compounds are qualified J. Non-detects compounds are not qualified.

**2,4-Dinitrophenol** BGJL9, BGJM0, BGJM1, BGJM2, BGJM3 and BGJM4

The following samples are associated with an opening CCV with percent difference (%D) exceeding criteria. Detected compounds are qualified J. Non-detected compounds are qualified UJ.

**2,4-Dinitrophenol** BGJL9DL and BGJM2DL

The following samples are associated with a closing CCV with percent difference (%D) exceeding criteria. Detected compounds are qualified J. Non-detected compounds are qualified UJ.

**2,4-Dinitrophenol** BGJL9, BGJM0, BGJM1, BGJM2, BGJM3 and BGJM4

**SV-SIM:**

No problems were found for this criterion.

**8. INTERNAL STANDARDS PERFORMANCE GC/MS:**

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must be in the range as specified in Table 10 of SOP HW-35A (Rev 1) of the associated continuing calibration internal standard area. The retention time of the internal standards must be within the range as specified in Table 10 of SOP HW-35A (Rev 1). If the area count is greater than, all positive results quantitated using that IS are qualified as estimated "J-", and non-detects are not qualified. If the area count is less than the associated standard, all positive results for compounds quantitated with that IS are qualified as estimated "J+" and all non-detects are qualified "R".

If an internal standard retention time were not met as specified in Table 10 of SOP HW-35A (Rev 1), the reviewer will use professional judgment to determine either partial or total



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rejection of the data for that sample fraction. Qualifications were applied to the samples and analytes as shown below. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

**9. FIELD DUPLICATES:**

No field duplicate sample was identified in this SDG.

**10. COMPOUND IDENTIFICATION:**

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within 0.06 RRT units of the standard compound and have ion spectra which have a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

**11. CONTRACT PROBLEMS NON-COMPLIANCE:**

No problems were found for this criterion.

**12. FIELD DOCUMENTATION:**

No problems were identified.

**13. OTHER PROBLEMS:**

None

**14. DILUTIONS, RE-EXTRACTIONS and REANALYSIS:**

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are used. See summary report and EDD for applicable samples and analytes.

**SVOA:**

The following dilution sample was only used for one or more analytes.  
BGJM2DL

The following dilution sample was not used.  
BGJL9DL

**SV-SIM:**

The following dilution sample was not used.  
BGJM4DL

**15. PERCENT SOLIDS:**



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The laboratory is required to perform the percent solids determination prior to sample preparation and analysis. All results of a sample with percent solids out of criteria will be qualified. Qualifications were applied to the samples and analytes as shown below.

Not applicable

### **ANALYSIS: PEST (MA # 3126.0)**

The current SOP QA-HWSS-A-007 (Rev 0) April 2022, USEPA Region II for the evaluation of Pesticides data, and all related Change Request Forms (CRF) for this SOP, generated through Statement of Work SFAM01.1, and any future editorial revisions of SFAM01.1 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi-Automated Screening Results Report.

#### **1. HOLDING TIME AND PRESERVATION:**

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those detected and non-detected analytes in the samples whose holding time has been exceeded will be qualified as per Table 2 of QA-HWSS-A-007 (Rev 0). Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

#### **2. SURROGATES:**

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate recovery were outside the specified limits in Table 10 of SOW SFAM01.1 (Exhibit D, pesticides analysis, Section 17), qualifications were applied as per Table 7 of SOP QA-HWSS-A-007 (Rev 0) to the samples and analytes as shown below.

No problems were found for this criterion.

#### **3. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD):**

MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

MS/MSD analyses were not performed for this SDG due to insufficient sample volume. No qualification was applied.

#### **4. LABORATORY CONTROL SAMPLE (LCS):**

LCS data is generated to determine the long-term precision and accuracy of the analytical method. The LCS may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.



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No problems were found for this criterion.

**5. BLANK CONTAMINATION:**

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects, "U". Qualifications were applied to the samples and analytes as shown below.

**A) Method/Instrument blank contamination:**

The instrument blank at the beginning of the analytical sequence was not analyzed in corrected sequence (IBLK should be analyzed before CCV) according to SOW [SFAM01.0 (05/2019) Exhibit D section 9.4.2.3 of D-27/PEST].

The instrument blank was not analyzed at the end of the analytical sequence as required by SOW [SFAM01.0 (05/2019) Exhibit D section 9.4.2.5 of D-28/PEST].

No target analytes were detected in the samples associated with the above instrument blanks. Therefore, no qualification required [SOP QA-HWSS-A-007 (Rev 0) Table 6. Blank Actions].

**B) Field or rinse blank contamination: BGJM1, BGJM3**

No problems were found for this criterion.

**6. CALIBRATION:**

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

**A) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):**

If %RSD exceeds 20% for all analytes except for alpha-BHC 25%, delta-BHC 25%, and Toxaphene 30%, detects are qualified "J" and non-detects are not qualified. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

**B) The Percent Difference (%D) for each of the SCP in the PEM used for CCV must be within  $\pm 25.0\%$ . The Percent Difference (%D) for target analyte in the Calibration Verification Standard (CS3) used for CCV must be within  $\pm 25.0\%$ . If the %D is not within limits, detects are qualified "J" and non-detects are qualified "UJ". Qualifications were applied to the samples and analytes as shown below.**

No problems were found for this criterion.



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7. **FIELD DUPLICATES:**

No field duplicate sample was identified in this SDG.

8. **COMPOUND IDENTIFICATION:**

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract. Qualifications were applied to the samples and analytes as shown below.

Percent Differences	Qualifier
0% - 25%	No qualification
26% - 200%	J
>200% (interference detected)	NJ
>200% (interference not detected)	NJ

The following samples were qualified for % difference on the two columns.

None

9. **CONTRACT PROBLEMS NON-COMPLIANCE:**

The instrument blank at the beginning of the analytical sequence was not analyzed in corrected sequence (IBLK should be analyzed before CCV) according to SOW [SFAM01.0 (05/2019) Exhibit D section 9.4.2.3 of D-27/PEST]. The instrument blank was not analyzed at the end of the analytical sequence as required by SOW [SFAM01.0 (05/2019) Exhibit D section 9.4.2.5 of D-28/PEST].

Both surrogates of instrument blank (PIBLK1AF) at the beginning of the analytical sequence were outside the QC limits. All samples associated with this IBLK should be re-analyzed as required in SOW [SFAM01.0 (05/2019) Exhibit D section 12.1.4.6 of D-28/PEST]. No action was taken.

10. **FIELD DOCUMENTATION:**

No problems were identified.

11. **OTHER PROBLEMS:**

No MS/MSD were analyzed due to no QC sample was assigned. The SOW does not indicate what action should be taken by the lab if no QC samples were assigned in C-O-C.

12. **DILUTIONS, RE-EXTRACTIONS & REANALYSIS:**

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are used. See summary report and EDD for applicable samples and analytes.

13. **PERCENT SOLIDS:**

The laboratory is required to perform the percent solids determination prior to sample preparation and analysis. All results of a sample with percent solids out of criteria will be qualified. Qualifications were applied to the samples and analytes as shown below.



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Not applicable